found in their countries of origin. A longer stay in the host country or being a child of immigrant parents is associated with increasing adaption to the new environment, and therefore the prevalence of asthma and allergies over time converge with the prevalence in the non-immigrant host population. Comparisons between populations in their countries of origin and those that emigrated vary depending on their level of development; more developed countries show higher rates of asthma and allergies. **CONCLUSIONS:** Preliminary findings suggest a strong influence of the environment on the development of asthma and allergies. The prevalence of asthma is generally higher in second generation immigrants. With length of stay the prevalence of asthma and allergies increases steadily. Further analysis should assess homogeneity across studies and obtain pooled risk estimates of migration status as a risk factor for asthma and allergies.

PRS16

PREDICTORS OF CIGARETTES SMOKING AMONG ADULTS IN FIVE COUNTRIES: CHINA, JORDAN, INDIA, TAIWAN, AND SAUDI ARABIA

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OBJECTIVES: Tobacco use remains the leading preventable cause of premature death worldwide. Survey-based smoking related data has been collected from China, Jordan, India, Taiwan, and Saudi Arabia between 2009-2012. Predictors of smoking within each country have been identified and recently published. The objective was to identify and compare smoking predictors that remain significant across countries after combining the data from various countries into one dataset. **METHODS:** Survey questions included socio-demographic characteristics, history of tobacco smoking, and environmental determinants of smoking like family and peer tobacco use. Multivariate logistic regression was constructed to determine predictors of smoking in the past month vs. no smoking. **RESULTS:** A total of 3,658 adults participated in the survey. Forty four percent of the participants had smoked cigarettes in the past month. Females were less likely to smoke (OR=0.30, 95% CI=0.22-0.42), whereas adults older than 25 (OR=1.63, 95% CI=1.16-2.29) or working/studying in medical related field (OR=2.08, 95% CI=1.10-3.95) were more likely to smoke. Compared to China participants, those from India, Saudi Arabia, Taiwan were less likely to smoke (OR=0.13, 95% CI=0.06-0.27 for India, OR=0.005, 95% CI=<.001-0.07 for Saudi Arabia, and OR=0.04, 95% CI=0.002-0.94 for Taiwan) while no significant differences were observed with Jordan participants. Teachers' anti-smoking messages significantly decreased the likelihood of smoking (OR=0.35, 95% CI=0.13-0.90). Social network, on the other hand, significantly increased the likelihood of smoking, especially among siblings (OR=1.70, 95% CI=1.25-2.31) and close friends (OR=1.96, 95% CI=1.34-2.86). Other variables associated with smoking included experiences with dyspepsia, education level, grades, personal feelings in previous week, and other substance use experiences (alcohol/cigar/chewing tobacco). **CONCLUSIONS:** The high smoking prevalence observed documents the magnitude of problem across these five countries. Future research should aim to incorporate the predictors identified above to develop effective interventions.

PRS17

LONG-ACTING MUSCARINIC ANTAGONISTS (LAMA) IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): A RARE EVENTS META ANALYSIS OF CLINICALLY RELEVANT ADVERSE EVENTS

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OBJECTIVES: Clinical trials have demonstrated that daily LAMA therapy in patients with COPD can improve lung function and quality of life. When LAMAs are clinically indicated, the three oral agents currently available include tiotropium bromide (TIOB), glycopyrronium (GLYCO) and most recently aclidinium bromide (ACLB). Placebo controlled trials have demonstrated efficacy, but safety data from head to head comparative trials are limited. In the absence of such data, mixed treatment comparison (MTC) models are a widely accepted statistical method of generating comparative safety information on clinically relevant but rare adverse events. In this study, an indirect comparison on safety was undertaken between TIOB, GLYCO and ACLB. **METHODS:** A systematic literature review of major English language databases was conducted from January 1992 to December 2013 for randomized placebo controlled trials evaluating at least one of the three agents in COPD. Bayesian MTC models were fitted to assess comparative safety based on major adverse cardiovascular events (MACE), acute urinary retention (AUR), glaucoma and all-cause mortality. Outcomes were adjusted for treatment duration and presented as a relative risk (RR) against ACLB. **RESULTS:** A total of 20 randomized trials met the inclusion criteria. Insufficient trial data were reported to allow an evaluation of AUR and glaucoma. There were no significant differences in the risk of MACE between TIOB vs. ACLB (RR=1.11; 95%CrI: 0.14 to 11.5) as well as GLYCO vs. ACLB (RR=3.5; 95%CrI: 0.34 to 52.7). Similarly, there were no significant differences in the risk of all-cause mortality between TIOB (1.11; 95%CrI: 0.16 to 7.7) and GLYCO (0.84; 95%CrI: 0.08 to 8.3) relative to ACLB. However, the magnitude of the RR for MACE suggests the potential for an increased risk with GLYCO when used as an alternative to ACLB. **CONCLUSIONS:** The risk of MACE and all-cause mortality with ACLB is comparable to both TIOB and GLYCO in patients with COPD.

PRS18

EVALUATION OF PHARMACY QUALITY ALLIANCE (PQA) MEASURES AMONG MEDICAID BENEFICIARIES WITH PERSISTANT ASTHMA

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OBJECTIVES: The 'suboptimal asthma control' (SAC) and the 'absence of controller therapy' (ACT) measures endorsed by the Pharmacy Quality Alliance evaluate inappropriate medication taking behavior in patients with asthma. The purpose of this study was to evaluate these PQA measures and assess predictors of qualifying into these measures among Medicaid beneficiaries from 39 states in the US. **METHODS:** Medicaid beneficiaries from 39 US states aged 5 to 50 years were identified in calendar year 2008. Of these, beneficiaries who filled one or more prescriptions for COPD medications, dornase alfa, or nasal steroid medications were excluded from the analysis. Beneficiaries with at least three canisters of short-acting beta agonists within 90 days were identified as those with SAC. Of the beneficiaries with SAC, those who did not receive asthma controller therapy in the same 90 day period were identified as those with ACT. Predictors of SAC and ACT were identified in 2007. **RESULTS:** A total of 77,783 asthma patients were identified in 2008. On an average, the proportion of patients with SAC and ACT in each state was 36.51% and 54.15% respectively. Higher age (OR:1.023; CI:1.022-1.024), male gender (OR:1.205; CI:1.180-1.230), Caucasian (OR:0.889; CI:0.873-0.906) and African American race (OR:0.799; CI:0.772-0.826), greater number of hospital visits (OR:1.034; CI:1.025-1.042), and greater number of asthma-related office visits (OR:1.194; CI:1.185-1.204) were significant predictors of SAC. Lower age (OR:0.996; CI:0.995-0.998), male gender (OR:1.121; CI:1.085-1.159), Caucasian (OR:1.279; CI:1.241-1.319) and African American race (OR:1.067; CI:1.009-1.128), greater number of emergency room visits (OR:1.021; CI:1.017-1.026), and lower number of asthma-related office visits (OR:0.696; CI:0.686-0.706) were significantly associated with ACT. **CONCLUSIONS:** Patient demographics and resource utilization in the previous year are significant predictors of SAC and ACT. Prescribers and payers should use these to identify patients with persistent asthma most likely to misuse SABA and who need more appropriate use of asthma controller therapy.

RESPIRATORY-RELATED DISORDERS – Cost Studies

PRS19

IMPROVING ADHERENCE TO SEASONAL ALLERGIC RHINITIS (SAR) PRACTICE GUIDELINES: BUDGET IMPACT ANALYSIS FOR AN INTRANASAL FORMULATION OF AZELASTINE HYDROCHLORIDE AND FLUTICASONE PROPIONATE FOR UNITED STATES HEALTH PLANS

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OBJECTIVES: Allergic rhinitis (AR) affects 10-20% of the US population, with treatment costs exceeding $6 billion annually. US practice guidelines suggest treatment with a combination of intranasal corticosteroids and antihistamines. MP29-02 is intranasal formulation of azelastine hydrochloride and fluticasone propionate in an advanced delivery system indicated for the relief of symptoms of seasonal AR (SAR). Patients treated with MP29-02 experience significantly greater symptom relief in comparison to first-line therapy in trials. OBJECTIVE: To use an economic model to calculate the per-member per-month (PMPM) budget impact on a US health insurer of moving MP29-02 from third-tier to second-tier pricing and reimbursement. **METHODS:** Population is SAR sufferers seeking treatment. MP29-02 is assumed to gain market share annually with second-tier pricing. Time horizon is one year and five years. Perspective is a US health plan with 500,000 enrollees. BIA is a pharmacy cost impact model using data from literature and supplied by Meda. Model assumes 10% branded drug price inflation; 80% brand to generic share shift and 50% price reduction; tiered payer rebate percentages and patient copay amounts. **RESULTS:** Estimated treated SAR population ranged from 63,165 at baseline to 68,630 in Year 5. Branded share of fluticasone-based products declined from 17% to 7%. Overall SAR treatment budget declined from $3.2 million annually at baseline to $3.1 million in Year 5 reflecting expected shift from branded to generic market share. According to baseline assumptions, marginal change in costs over the one-year time horizon from moving MP29-02 from third-tier to second-tier pricing are $19,659 (<$0.01 PMPM). Costs associated with the 5-year horizon, given changes in market shares, are $97,342 ($0.01 PMPM). **CONCLUSIONS:** MP29-02 offers an appropriate means of adhering to AR practice guidelines and improving outcomes, and this BIA model shows that the added costs of those benefits are minimal to US payers.

PRS20

THE SHORT-TERM ECONOMIC IMPACT OF CHILDHOOD PREVENTIVE HEALTH PROGRAMS IN MEXICO

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OBJECTIVES: Respiratory syncytial virus (RSV) is a primary cause of lower respiratory tract infection in infants and children and leads to substantial morbidity. Palivizumab is a monoclonal antibody demonstrated to significantly reduce the frequency of hospitalizations for RSV infection in high-risk populations, including preterm infants and children with bronchopulmonary dysplasia and congenital heart disease. National costs of implementing a childhood prophylaxis program have not been well characterized. The objective was to compare the financial impact of implementing a RSV prevention program in high-risk infants using palivizumab, to three established childhood prophylaxis programs in Mexico: 13-valent pneumococcal conjugate vaccine (PCV13); quadrivalent human papillomavirus (HPV) vaccine; and *Bordetella pertussis* (*B. pertussis*) vaccine. **METHODS:** A model was developed to estimate the one-year budget impact of palivizumab for the prevention of severe RSV infection in high-risk populations in Mexico, from the national health care perspective. Model inputs were derived following a literature review on the health care system, and included the epidemiology of severe RSV infection in Mexico and Latin America, with appropriate Mexican resource utilization and cost estimates. **RESULTS:** The cost of prophylaxis with palivizumab was approximately MXN$283 million. The corresponding costs for PCV13, HPV vaccine, and *B. pertussis* vaccine were estimated at MXN$1.1 billion; MXN$579 million; and MXN$636 million, respectively. Total disease cost estimates were MXN$878 million for RSV